July 22, 1958 R. H. WILLIAMS 2,844,295

BOXES

Filed Jan. 31, 1955 2 Sheets-Sheet 1

FIG. 1

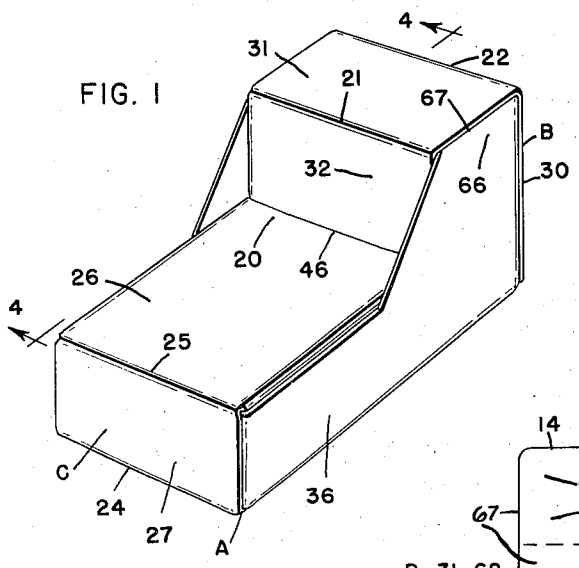


FIG. 2

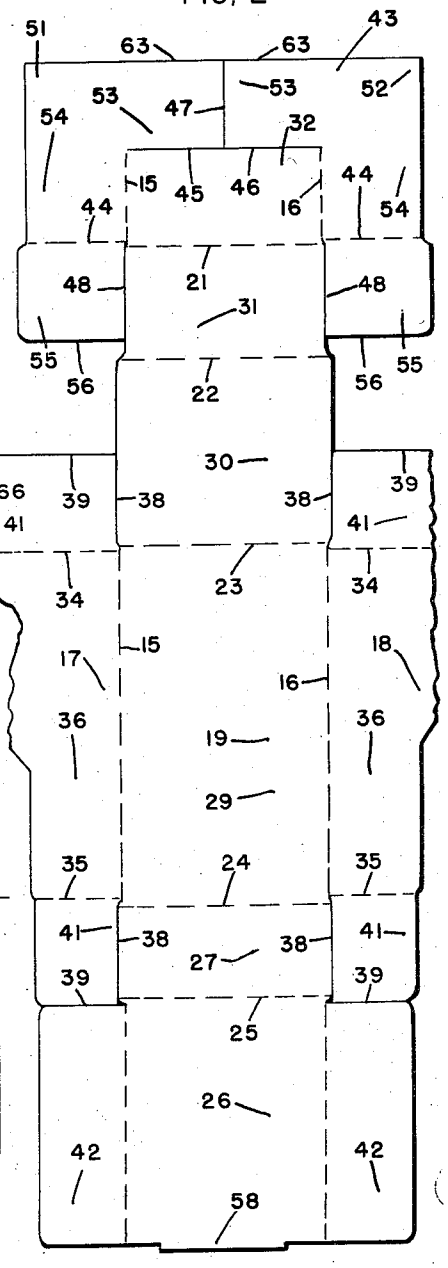


FIG. 4

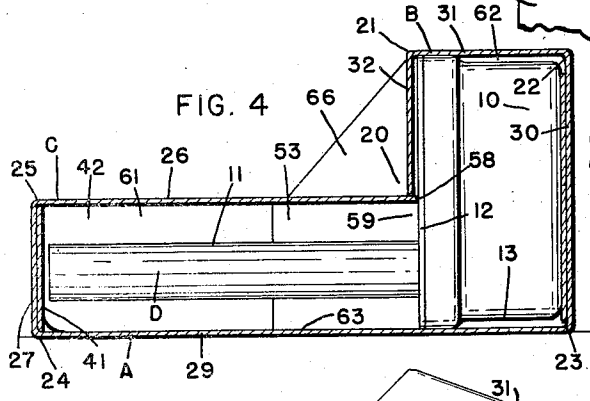
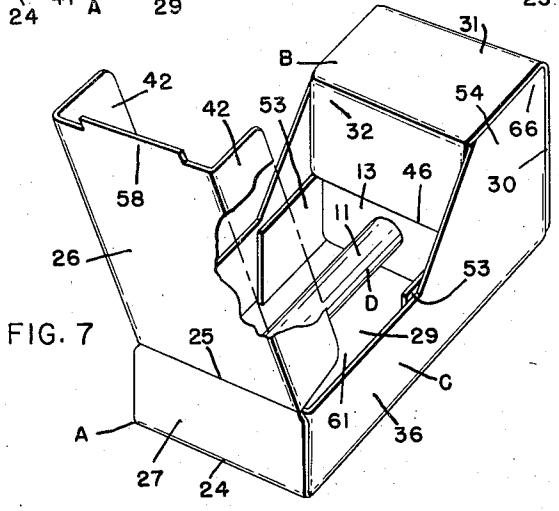


FIG. 7



INVENTOR
RICHARD H. WILLIAMS

Caswell & Lagaard
ATTORNEYS

July 22, 1958 R. H. WILLIAMS 2,844,295

BOXES

Filed Jan. 31, 1955 2 Sheets-Sheet 2

FIG. 6

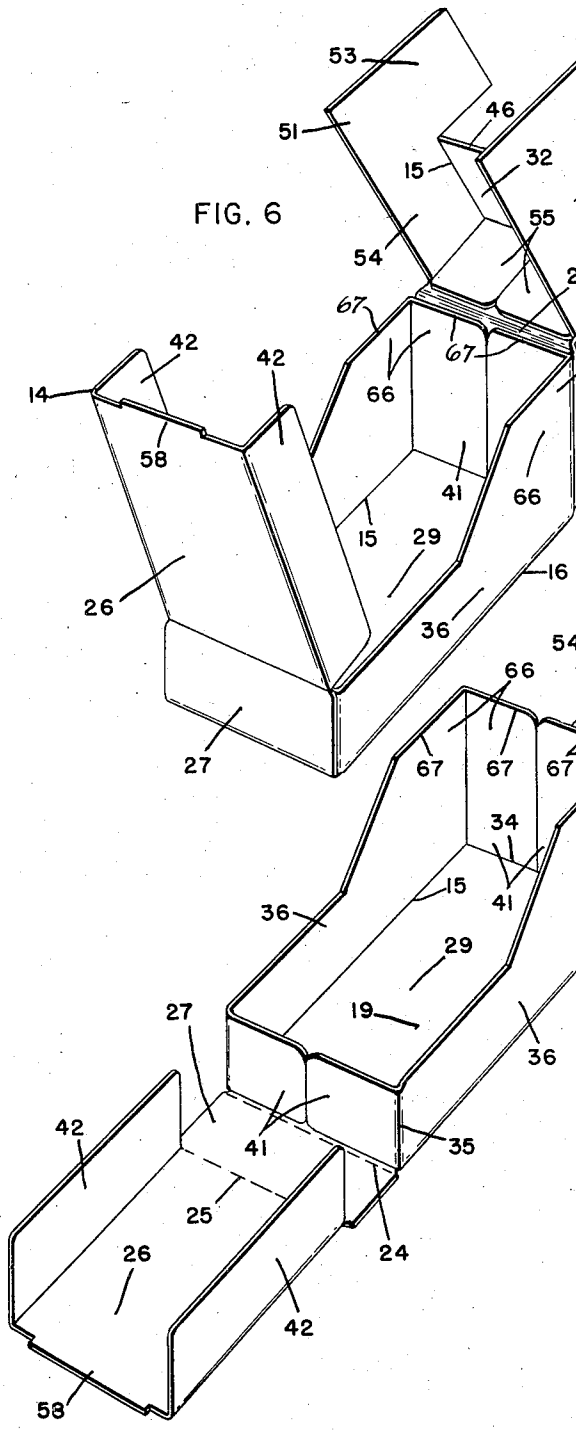


FIG. 5

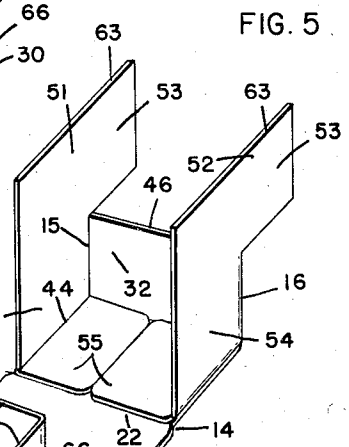
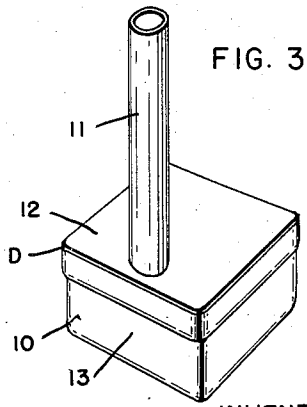


FIG. 3



INVENTOR
RICHARD H. WILLIAMS
Caswell & Lagaard
ATTORNEYS

United States Patent Office

2,844,295

Patented July 22, 1958

2,844,295

BOXES

Richard H. Williams, Minneapolis, Minn., assignor to Northwestern Corrugated Box Co., Minneapolis, Minn., a corporation of Minnesota

Application January 31, 1955, Serial No. 484,900

4 Claims. (Cl. 229—33)

The herein described invention relates to an angle shaped box having a body and a wing issuing therefrom and formed with a bight therebetween and has for an object to provide a construction in which the box is greatly reinforced at the crotch of the bight.

Another object of the invention resides in providing a box constructed from a single blank and in which the article is held in position without the use of separate pads or similar structures.

A still further object of the invention resides in providing a box which can be quickly and easily erected.

An object of the invention resides in providing a box having a longitudinal wall structure including an inner end wall and a top wall for the body, a top wall for the wing meeting the inner end wall of the body at the crotch of the bight and a bottom wall common to both the body and the wing and in further providing angle shaped wall structures issuing from the inner end wall and having legs forming lateral walls for the body and other legs extending between the top wall and the bottom wall of the wing.

A still further object of the invention resides in hingedly connecting the angle shaped wall structures to the inner end wall along the lateral edges thereof.

An object of the invention resides in providing flaps on the outermost ends of the first named legs of the angle shaped wall structures adapted to underlie the top wall of the body of the box.

Another object of the invention resides in providing flaps issuing from the lateral edges of the bottom and forming side walls for the box and in constructing said flaps with extensions engaging the top wall of the body of the box to make the box more rigid.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a perspective view of a box illustrating an embodiment of the invention and containing the article for which it is designed.

Fig. 2 is a developed view of the blank from which the box is constructed.

Fig. 3 is a perspective view of the article to be contained within the box.

Fig. 4 is a longitudinal sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a perspective view showing the blank partially folded.

Fig. 6 is a perspective view similar to Fig. 5 showing the blank further folded.

Fig. 7 is a view similar to Figs. 5 and 6 showing the blank still further folded and with the article placed within the folded structure.

The box illustrated in the drawings consists of a body and a wing extending outwardly therefrom and arranged to form a bight therebetween. The box is constructed from a substantially rectangular blank having two longitudinally extending scores spaced from the lateral edges

of the blank to provide a longitudinal intermediate portion and marginal portions issuing therefrom. In addition, the blank is formed with a number of transverse scores dividing the intermediate portion into panels forming when erected a top wall and an outer end wall for the wing. Further, transverse scores provide on the intermediate portion panels forming when erected a rear end wall, a top wall and inner end wall for the body, and a bottom wall common to both the wing and the body. The blank extends outwardly beyond the inner end wall panel for the body and is severed along a line at such locality and also along lines at the lateral edges of the top wall panel for the body, along lines corresponding with the score between the rear end wall panel and the top wall panel for the body and along a medial line through the portion of the body disposed outwardly of the inner end wall panel for said body. In addition, the marginal portions of the blank outwardly of the longitudinal scores is scored along a line in substantial continuation of the score between the inner end wall panel and the top wall panel of the body to form two angle shaped wall structures issuing from the lateral edges of the inner end wall panel of the body and flaps foldable inwardly from the outermost edges of the same. These wall structures provide legs which when the box is erected form the lateral walls of the body and other legs which extend into the same and engage the top wall of the wing and the bottom wall of the box. The blank is further formed with scores extending across the marginal portions of the same and provide panels which when erected form the lateral walls of the box said walls being adapted to overlie the portions of the lateral wall structures of the body and close the sides of the wing. The inner end wall of the body is formed with a shoulder and the top wall of the wing is formed with a tongue engageable with said shoulder when the box is closed to hold the parts in assembled relation. A band of adhesive tape may be used which extends about the wing and engages the flaps, top wall and bottom wall thereof and further holds the parts from disengagement.

The improved box as illustrated in Fig. 1 is indicated by the reference character A, and consists of two portions B and C. Portion B is referred to as the body of the box and portion C as a wing issuing outwardly therefrom. This body serves the purpose of receiving an article D such as shown in Fig. 3. The body B and the wing C are so constructed that when the box is assembled a bight **20** is formed between said portions of the box.

The article D, as best shown in Fig. 3, consists of a case **10** rectangular in form and which has issuing from it a tubular projecting member **11**. This member issues from the top **12** of the case and near one of the sides **13** thereof. The article has other additional parts which may be suitably supported in the box. The invention proper concerns itself principally with the attachment of the closure members of the body and wing and has no particular reference to these parts. Said parts have hence not been illustrated or described in detail in the application.

The box A is constructed from a single blank **14** which is substantially rectangular in form and which has two longitudinal scores **15** and **16**. These scores are spaced from the lateral edges of the blank and divide the blank into marginal portions **17** and **18** and a longitudinal intermediate portion **19**. Extending across the intermediate portion **19** are a number of scores **21**, **22**, **23**, **24** and **25** which divide the intermediate portion into panels which when erected form a top wall **26**, an outer end wall **27** for the wing C, a bottom wall **29** common to both the wing and the body, a rear end wall **30**, a top wall **31** and an inner end wall **32** for the body B. These walls form in combination an intermediate lon-

gitudinal wall structure for the box. The blank is further formed with transverse scores **34** and **35** extending in substantial alignment with the scores **23** and **24** and which form in the marginal portions **17** and **18** angle-shaped flaps **36** issuing outwardly of the bottom wall **29**. The marginal portions **17** and **18** are formed with kerfs **38** and **39** which, together with the scores **34** and **35**, form flaps **41** issuing from the flaps **36** and which, when the box is erected, are adapted to lie within the box and adjacent to the outer end wall **27** of the wing and the outer end wall **30** of the body. The flaps **36** and **41** are formed with extensions **66**, the upper edges **67** of which engage the top wall **31** of the box when erected and stiffen and reinforce the box. The kerfs **39**, together with the scores **15** and **16**, form on the top wall **26** other flaps **42** which issue outwardly from the top wall **26** and which, when the box is erected, are adapted to be received within the flaps **36** to form lateral walls for the wing C.

The blank **14** is provided with a projecting portion **43** which lies outwardly of the panel forming end inner wall **32** of the body B. The blank is formed with scores **44** which extend across the marginal portions **17** and **18** of the blank and in substantial alignment with the score **21**. In addition, the blank is formed with a transverse kerf **45** separating the projecting portion **43** from the intermediate portion **19** and providing in the panel forming the inner end wall **32** an inwardly facing shoulder **46** which serves a purpose to be presently described. The projecting portion **43** is further constructed with a longitudinal kerf **47** which is situated midway between the scores **15** and **16**. In addition, the blank is formed with longitudinal kerfs **48** which define the lateral edges of the panel forming the top wall **31** of body B. By means of this construction, two angle shaped lateral wall structures **51** and **52** are provided which have legs **53** and **54**. The kerfs **48** and the scores **44** form flaps **55** issuing from the legs **54** and which are separated from the remaining parts of the marginal portions **17** and **18** along lines **56**.

In mounting the articles D within the box, the case **10** is received within the body B of the box and the projecting member **11** is received within the wing C. When the box is placed on the bottom **29** and the article inserted into the box, the projecting member **11** lies horizontally as shown in Fig. 7 and extends into the wing C, the side **13** of the article resting upon the bottom wall **29**.

The box is so designed that the shoulder **46** on the inner end wall **32** and formed by the kerf **45** lies flush with the top wall **26** of the box when the same is in erected position as shown in Fig. 4. Formed on the end of the top wall **26** of wing C is a tongue **58** which engages beneath the shoulder **46** when the box is closed. The width of the legs **54** is substantially equal to the height of the flaps **42** so that when the box is erected these legs are received within the flaps **42** and engage the top wall **26** of wing C and the bottom wall **29** of the box. When the tongue **58** is disposed beneath the shoulder **46**, the parts become locked in position. This construction provides a space **59** which brings the compartment **61** within the wing C into communication with the compartment **62** within the body B and through which the projecting member **11** of the article D extends.

The method of assembling the box and of inserting the article in the box is as follows: The lateral wall structures **51** and **52** are first folded along the scores **44** to cause the flaps **55** to project angularly therefrom. The inner end wall **32** is next folded along the score **21** and the lateral wall structures **51** and **52** folded along the scores **15** and **16**. The parts then become arranged as shown in Fig. 5 with flaps **55** overlying the top wall **31**. The flaps **41** are next folded along the scores **34** and **35** and the flaps **36** and **42** folded along scores **15** and **16**, the parts taking the positions shown in Fig. 5. The outer end wall **27** of wing C is next folded along score **24** and the outer end wall **30** of body B is folded along score **23** until the parts take the position shown in Fig. 6. The article D is next placed within the box in the position shown in Figs. 4 and 7. The wall structures **51** and **52** are now caused to enter into the box with the edges **63** of the same resting upon the bottom wall **29** of the box. This causes the parts to assume the position shown in Fig. 7, completing the formation of the body B. When the parts are so arranged, the legs **54** together with the extensions **66** and flaps **36** form the lateral walls of the body B while the legs **53** lie along the inner surfaces of the flaps **36**. Also the upper edges **67** of the flaps **66** and **36** engage the top wall **31** of the body B. The top wall **26** of the wing C may now be folded into position. In the folding of the same, the flaps **42** may be inserted between the legs **53** of the wall structures **51** and **52** and the flaps **36** or inwardly thereof as found desirable. In either case, as the tongue **58** reaches the crotch of the bight **20**, the same passes beneath the shoulder **46** on the inner end wall **32** of body B and together with the legs **53** lock the parts in position. The operation of packaging the articles is completed by wrapping a band of adhesive, not shown, material about the wing C if desired, thus securing the various walls of the wing from movement and holding the parts rigidly assembled.

The advantages of the invention are manifest. A very strong construction is formed at the bight between the body and wing of the box which rigidly supports the article within the box and prevents separation of the wing from the body in the transportation and handling of the box. The added structure is formed from portions of the blank without waste of material. With the instant invention, stapling of the parts together is dispensed with and the box held closed by the interlocking of the parts. The box can be quickly and easily erected thus saving time in the packaging of the goods.

Changes in the specific form of the invention, as herein described, may be made within the scope of what is claimed without departing from the spirit of the invention.

Having described the invention, what is claimed as new and desired to be protected by Letters Patent is:

1. An angle-shaped box having a body and a wing issuing outwardly therefrom to form a bight therebetween, said box including a bottom wall common to said body and wing, an outer end wall for said body having one end connected to one end of said bottom, a top wall for said body having one end connected to the other end of said outer end wall, an inner end wall for said body having one end connected to the other end of said top wall, an outer end wall for said wing having one end connected to the other end of said bottom wall, a top wall for said wing having one end connected to the other end of said outer end wall of said wing and extending up to said inner end wall of said body, side wall flaps connected at certain of their outer lateral marginal portions to the lateral marginal portions of the bottom wall and extending upwardly therefrom to form side walls for both the body and the wing, angle-shaped wall structures having legs angularly disposed relative to one another, certain of the legs thereof being connected at their inner marginal portions and at a locality adjacent the companion legs to the lateral marginal portions of said inner end wall for the body, said legs lying inwardly of and being juxtaposed relative to said side wall flaps, and with their outermost edges engaging the bottom wall and top wall of said body, said attached legs underlying the top wall of the wing and engaging the underside thereof, and means for securing the parts together.

2. An angle-shaped box having a body and a wing issuing outwardly therefrom to form a bight therebetween, said box including a bottom wall common to said

body and wing, an outer end wall for said body having one end connected to one end of said bottom, a top wall for said body having one end connected to the other end of said outer end wall, an inner end wall for said body having one end connected to the other end of said top wall, an outer end wall for said wing having one end connected to the other end of said bottom wall, a top wall for said wing having one end connected to the other end of said outer end wall of said wing and extending up to said inner end wall of said body, side wall flaps connected at certain of their outer lateral marginal portions to the lateral marginal portions of the bottom wall and extending upwardly therefrom to form side walls for both the body and the wing, angle-shaped wall structures having legs angularly disposed relative to one another, certain of the legs thereof being connected at their inner marginal portions and at a locality adjacent the companion legs to the lateral marginal portions of said inner end wall for the body, said legs lying inwardly of and being juxtaposed relative to said side wall flaps, and with their outermost edges engaging the bottom wall and top wall of said body, said attached legs underlying the top wall of the wing and engaging the underside thereof, said top wall of said wing and the inner wall of said body meeting at the crotch of said bight, said inner wall having an inwardly facing shoulder and said top wall having a portion engaging said shoulder to secure the parts together.

3. An angle-shaped box having a body and a wing issuing outwardly therefrom to form a bight therebetween, said box including a bottom wall common to said body and wing, an outer end wall for said body having one end connected to one end of said bottom, a top wall for said body having one end connected to the other end of said outer end wall, an inner end wall for said body having one end connected to the other end of said top wall, an outer end wall for said wing having one end connected to the other end of said bottom wall, a top wall for said wing having one end connected to the other end of said outer end wall of said wing and extending up to said inner end wall of said body, side wall flaps connected at certain of their outer lateral marginal portions to the lateral marginal portions of the bottom wall and extending upwardly therefrom to form side walls for both the body and the wing, flaps extending inwardly from the ends of said side wall flaps and disposed in juxtaposition relative to the outer end wall of the body and the outer end wall of the wing, flaps issuing inwardly from the lateral marginal portions of the top wall of the wing and being disposed inwardly of and juxtaposed relative to said side wall flaps, angle-shaped wall structures having legs angularly disposed relative to one another, certain of the legs thereof being connected at their inner marginal portions and at a locality adjacent the companion legs to the lateral marginal portions of said inner end wall for the body, said legs being disposed inwardly of and juxtaposed relative to said side wall flaps, and with their outermost edges engaging the bottom wall

and top wall of said body, said attached legs underlying the top wall of the wing and engaging the underside thereof, the legs of said angle-shaped wall structures extending into said wing being disposed inwardly of and juxtaposed relative to said last named flaps, said top wall of said wing and the inner wall of said body meeting at the crotch of said bight, said inner wall having an inwardly facing shoulder and said top wall having a tongue engaging said shoulder to secure the parts together.

4. A substantially rectangular blank for forming angle-shaped boxes provided with a body and a wing, said blank having two longitudinal scores spaced from the longitudinal edges thereof to form therebetween a longitudinal portion and outwardly thereof marginal portions, said blank further having transverse scores extending across said longitudinal portion and dividing the same into sections comprising in series a top wall panel for the wing, an outer end wall panel for the wing connected at one end to one end of the top wall panel, a bottom wall panel common to said wing and body, and connected at one end to the other end of the outer end wall panel, an outer end wall panel for the body connected at one end to the other end of the bottom wall panel, a top wall panel for the body connected at one end to the other end of the last named outer end wall panel and an inner end wall panel for said body connected at one end to the other end of the last named top wall panel, said blank having side wall flaps extending outwardly from the lateral portions of said bottom wall panel and connected thereto, said blank having angle-shaped structures extending laterally and longitudinally beyond the inner end wall panel and the top wall panel for said body and being severed along the outermost transverse edge of said inner end wall panel for said body, along the lateral edges of said top wall panel for said body, across the marginal portions of the blank in proximity to the transverse score between the outer end wall panel and top wall panel for the body and along a longitudinal line across the portion thereof outwardly of the inner end wall panel for said body and being further formed with transverse scores at the lateral marginal portions of the inner end wall panel and with transverse scores lying substantially in continuation with the score between said inner end wall panel and the top wall panel for the body and forming flaps therein, and being connected to said inner end wall panel, said angle-shaped structures when the box is erected being disposed inwardly of and juxtaposed relative to said side wall flaps.

References Cited in the file of this patent

UNITED STATES PATENTS

963,351	Beehler	July 5, 1910
1,131,948	Osborn	Mar. 16, 1915
1,188,825	Potter	June 27, 1916
1,747,981	Marsh	Feb. 18, 1930
2,331,753	Wohlers	Oct. 12, 1943
2,670,126	Frankenstein	Feb. 23, 1954